



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,343	08/27/2003	Leonhard Kistler	774,050	4160

7590 12/15/2004

John S. Egbert
Harrison & Egbert
7th Floor
412 Main Street
Houston, TX 77002

EXAMINER

KOCH, GEORGE R

ART UNIT	PAPER NUMBER
----------	--------------

1734

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,343

Applicant(s)

KISTLER ET AL.

Examiner

George R. Koch III

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 17-32 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 17-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. This application is a poor translation of the German application, and utilizes non-standard language compared to the art in general. It is very unclear to what most of the structures of the claim actually refer.
4. Claim 17 recites the limitation "the positioning device" in line 13. There is insufficient antecedent basis for this limitation in the claim. Claim 17 previously referred to an "allocated positioning device", and an "assigned positioning device", then "the positioning device". For the purposes of examination, the examiner has assumed these structures are identical to the structures in Falck and Estelle '891.
5. Claim 18 recites the limitation "said target value" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. Perhaps "said target value input" was intended?

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 17-19, 23 and 28-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Falck (US Patent 6,423,366 B2).

Falck discloses a device for applying a coating medium onto a substrate, in particular for application of coating materials to sheet metal, the device comprising at least one spray valve (item 78) that can be adjusted with regard to its effective outlet area (see column 6, lines 41-54) that can be positioned by an allocated positioning device (see column 6, lines 55-64), whereby the substrate can be moved past the spray valve, which can be supplied with the coating medium under pressure via a supply line (see Figure 8), wherein the closing mechanism can be adjusted continuously within a pre-specified adjustment field using the assigned positioning device, whereby the positioning device is assigned a regulator (controller 16) that has at least one target value input for the instantaneously required outflow rate of the coating medium from the spray valve, and at least one actual value input for the mass flow rate (see columns 4-5) through a supply section arranged in front of the arranged in front of the nozzle opening

and from the deviation the regulator forms an adjustment signals that moves the positioning device in the direction to offset the deviation.

As to claim 18, Falck is capable of having the target value adjusted depending on the coating thickness profile desired (see column 6, line 55 to column 7, line 25 and column 8, line 51 to column 8, line 2, especially the references to controlling coating weight, which is the controlling of coating thickness).

As to claim 19, Falck discloses that the position of the substrate is detected via a path measurement device (item 30) whose output is at the input of a target value control element (item 16) constructed as a computer in which the desired coating thickness is saved and which forms the target value for the outflow rate from this instantaneous value of the position of the substrate and the coating thickness allocated to this position.

It is noted that claim 19 recites "preferably in the form of a coating thickness profile". The

As to claim 23, Falck discloses a pressure line (see column 8, lines 3-17) which can impinge the spray valve with air which allows for spraying of the coating medium. Falck discloses a number of valves inbetween (see Figures 2 and 2a).

As to claim 28, Falck discloses that the regulation is a programmable logic controller (column 3, lines 29-37), i.e., a programmable microprocessor.

As to claim 29, the apparatus and controller of Falck is capable of being used such that they record or display the deviations and their components in the form of actual outflow rates and associated target values.

As to claim 30, controller 16 is an integrated regulation device.

8. Claims 17, 18 and 29-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Estelle (US patent 6,517,891 B1).

Estelle '891 discloses a device for applying a coating medium onto a substrate and capable of applying lubricant onto sheet meet, the device comprising at least one spray valve (item 50) having a nozzle opening (item 24) that can be adjusted with regard to its effective outlet area using a closing mechanism (item 48), that can be positioned by an allocated positioning device, whereby the substrate can be moved past the spray valve (via item 30) the spray valve can be supplied with the coating medium under pressure via a supply line (the connection to pump 52), characterized in that the closing mechanism is capable of being continuously adjusted within a pre-specified adjustment field using the assigned positioning device (subcomponent of 48), whereby the positioning device is assigned a regulator (item 46 and 38) that is capable of having at least one target value input (see Figure 2b, steps 234 and 238) for the instantaneously required outflow rate of the coating medium from the spray valve and at least one actual value input for the mass flow rate (signal from pressure transducer 62) through a supply section arranged in front of the nozzle opening, and from the deviation, the regulator forms an adjustment signal that moves the positioning device in the direction to offset the deviation (see, for example, column 6, lines 32 to column 7, line 11)..

As to claim 18, Estelle '891 is capable of adjusting the target value depending on a coating thickness profile desired over the length of the substrate running in the thickness direction (see column 1, lines 36-48, which discloses that pressure affects thickness. Thus, Estelle '891 can adjust thickness).

As to claim 29, the apparatus and controller of Estelle '891 is capable of being used such that they record or display the deviations and their components in the form of actual outflow rates and associated target values.

As to claim 30, solenoid controller is an integrated regulation device.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Falck as applied to claim 17 above.

As to claim 31, Falck discloses a plurality of spray valves (Figure 8, item 78), each controlled by a regulator (item 16 - each section of the controller for the individual controlled valve is a regulator), and that the regulator of all spray valves are connected to a common target value control element (items 16 and 96), in which the coating thickness values of the zones and the temperatures, and which forms the target values for all spray valves.

However, Falck merely discloses "controllers" and does not go further and specify the type of controllers, such as a computer with a memory register. However, official notice is taken that computers with memory registers, i.e. data memory, are well known and conventional control devices widely used in virtually every industry. One in the art would immediately appreciate that a computer would provide programmable control functioning, and would be an affordable and easily available solution. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a computer with conventional memory in order to provide an affordable and available solution to controlling the apparatus.

Furthermore, as to claim 32, Falck discloses a number of data buses, i.e., wiring, for providing data to the regulators and the associated spray valves (see items 92, 90, 79, etc, in Figure 2a).

12. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estelle '891 as applied to claims 17 and 18 above, and further in view of Estelle '325 (US Publication 2002/0079325 A1).

Estelle '891 discloses all of the limitations of claim 17 and 18, but does not suggest detecting, via a path measurement device, a position of the substrate within its path passing the spray nozzle.

Estelle '325 discloses detecting, via a path measurement device (trigger sensor 41 and conveyor motion sensor 34), the position of a substrate within its path passing the spray nozzle. The controls of Estelle '891 and Estelle '325 are both capable of then having a target control element constructed as a computer in which the desired coating thickness, and preferably in the form of a coating thickness profile, is saved and which forms the target value for the outflow rate from this instantaneous value of the position of the substrate and the coating thickness allocated to this position. Estelle '325 discloses that this trigger sensor enables synchronization of the motion of the substrate (see paragraph 0023), in response to which the gun controller can accurately coat the substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such a path measurement sensor such as trigger sensor 41 in order to enable synchronization in order to ensure accurate coating.

As to claim 20, Estelle '325 as incorporated further discloses that the path measurement devices (items 41 and 34) are assigned to the conveyor device (item 30) that transports the substrate by the spray valve.

As to claim 21, Estelle '325 as incorporated further discloses that a beginning of the path measurement can be activated by the substrate and that the devices of the spray valve can be turned on or off (for example, as described in paragraph 0023 and

the specification in general) by the target value control element in advance of the opening of the nozzle opening.

13. Claims 22 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Falck as applied to claim 17 above, and further in view of Bleck (US 6,436,556).

Falck discloses controlling the temperature (i.e., the target value input) in order to ensure proper coating of the sheet metal, but does not disclose monitoring the temperature, (i.e., the actual value input).

Bleck discloses a sensor for monitoring the temperature of the coating liquid (item 91), and discloses that one would do so in order to ensure proper coating (see column 2, lines 38-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a temperature sensor for creating an actual value input in order to ensure proper coating temperature

Furthermore, as to claims 24-25, Falck discloses monitoring and controlling mass flow. Bleck discloses controlling and monitoring temperature. Official notice is taken that it would have been well known and conventional to have the mass flow rate element be a venture type diaphragm with a regulator attached. Such detectors provide accurate mass flow rate measurements. Furthermore, combined sensors as in claim 25 reduce the wiring complexity. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a well known and conventional mass flow rate measurement element with a venture type diaphragm and pressure

regulator with an integrated temperature sensor in order to reduce instrumentation complexity.

14. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Falck or Estelle '891 as applied to claim 17 above, and further in view of Price (US Patent 4,922,852).

Falck and Estelle '891, while disclosing all of the limitations of claim 17, do not disclose the structure of the spray. One in the art would immediately appreciate that any solenoid based spray valve could be used.

Price discloses a spray valve with a conical opening and a valve needle (32-33) moved axially by a drive device. Price discloses that such a needle valve system results in instantaneous rate of flow (see column 6, lines 35-63). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such structures in order to provide instantaneous rate of flow.

As to claim 27, Price as incorporated further discloses that the structures include a linear motor in the form of a magnet arrangement having a coil that can be impinged with current (see column 5, lines 10-47). This structure, when combined with Falck or Estelle '891, can be controlled by the regulator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the

applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George R. Koch III
Patent Examiner
Art Unit 1734

GRK
12/10/2004